

REMARKS

The examiner furnished a new restriction requirement in view of Applicant's addition of Claims 59-89 in the prior response. The examiner stated that: "2. Newly submitted claims 71-82, 86 and 88 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: these claims are drawn to the nonelected species of claim 14."

Applicant has updated the status of the withdrawn claims.

Applicant pursuant to 35 U.S.C. 121 maintains the election of the disclosed species of claims 2-13 and notes that at least claims 1, 6-9, 11, 83, 84 and 87 are generic. Applicant claims 59-70 read on the species of "claims 2-13, drawn to a valve containing two members both with holes movable with respect to each other" and claims 71-82 read on the species of "claim 14, drawn to a valve containing one member with holes and a shape memory alloy ribbon capable of changing shape to cover or uncover the hole. Claims 85 and 89 read on the species of claims 2-13 and claims 86 and 88 read on the species of claim 14.

Claim Objections

The examiner objected to 85 under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant has amended the base claim 83 to delete cylindrical and thus now places the claim in proper dependent form.

Claim 15 was objected to for being identical to claim 4. Claim 15 has been amended to depend from claim 6 and thus is no longer identical to claim 4, since claim 4 depends from claim 1 and therefore this objection has also been overcome.

112, second paragraph

The examiner rejected Claim 83 under 35 U.S.C. 112, second paragraph since the limitation "cylindrical" did not have antecedent basis in the claim. Applicant has adopted the examiner suggestion and removed the cylindrical limitation from claim 83 which also overcomes the objection to claim 85.

102(e) Rejection

The examiner rejected Claims 1-10, 12, 15, 51-55, 59-68, 83-85, 87 and 89 under 35 U.S.C. 102(e) as being anticipated by Johnson (US Patent 6,955,187).

Applicant's claim 1 is neither described nor suggested by Johnson, since Johnson neither describes nor suggests a mechanism ... the mechanism comprising a member whose shape deforms in response to a current drawn from the battery ... the member has a first shape that allows air to pass through the opening in the first member ... and the member has a second shape ... to ... inhibit air from passing through the opening and into the battery.

In rejection of claim 1, the examiner stated:

Regarding claims 1-3, 51-53 and 59-61, Johnson teaches a battery having a control valve for controlling airflow into the battery. The control portion is made of two cylindrical sleeves, or members, having holes, that can be moved into or out of registration depending on whether air is required for the cell. The movement is controlled by actuators that are attached to the cylinders (abstract; Figure 1; column 3 lines 9-11).

Claim 1 is distinct over Johnson. Claim 1 recites and requires "a first member having at least one hole that is exposed to air and a second member. Claim 1, as amended, also requires" "a mechanism, comprising a member whose shape deforms in response to a current drawn from the battery, the member being coupled to one of the first and second members to move the one of the first and second members such that when current is drawn from the battery, the member has a first shape that allows air to pass through the opening ... and the member has a second shape that causes the one ... to move and inhibit air from passing through the opening

Johnson neither describes nor suggests claim 1 and specifically the claimed mechanism. The examiner readily notes that: "Johnson teaches ... The movement is controlled by actuators that are attached to the cylinders (abstract; Figure 1; column 3 lines 9-11)."

In contrast, Claim 1 calls for a member that deforms in shape to control whether the opening in the first member allows or inhibits air flow. An example is shown in FIGS. 1A, 1B, of Applicant's specification with member 16 controlling movement of the inner cylinder to allow and inhibit air from entering the battery.

FIGS. 1A and 1B are reproduced below:

FIG. 1A

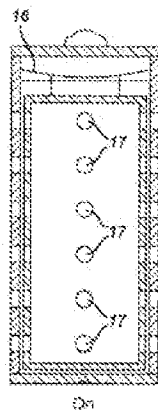
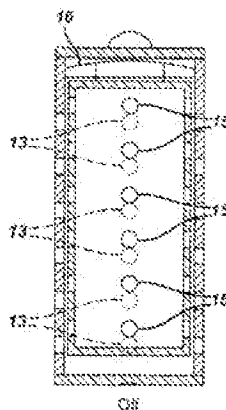


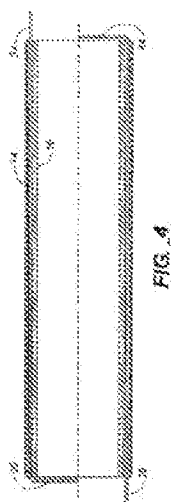
FIG. 1B



In contrast, Johnson discloses the use of two wires 34, 36 that lengthen or contract, as oppose to change shape. In addition, both of the wires are required for operation of the valve. One wire is required to open the valve disclosed by Johnson, whereas the other wire is required to close the valve disclosed by Johnson. Therefore, Johnson fails to describe or suggest "a mechanism, comprising a member whose shape deforms in response to a current drawn from the battery, ... the member has a first shape that allows air to pass through the opening ... and the member has a second shape ... to ... inhibit air from passing through the opening

Sheet 2 of 8

US 6,955,187 B1



Accordingly, Johnson does not identically describe the features of claim 1 and therefore Johnson cannot anticipate claim 1. Moreover, Applicant contends that the differences between the claimed mechanism and that disclosed by Johnson, precludes any suggestion to so modify Johnson and thus claim 1 is also not obvious over Johnson. Therefore, claim 1 is allowable over Johnson.

Claims 2-7 are allowable at least for the reasons discussed in claim 1.

Claim 8 depends from claim 7 and serves to further distinguish since Johnson neither describes nor suggests that: "the actuator is coupled to a circuit and only draws power during a change of state allowing the circuit to minimize drain on the battery."

Claim 9 depends from claim 6 and serves to further distinguish since Johnson neither describes nor suggests that: "the actuator is a wire with the wire changing between a convex and a concave shape to change the position of the second cylinder. Johnson neither describes nor suggests a wire or that the wire changes between a convex and a concave shape to change the position of the second cylinder.

Claim 10 depends from claim 9 and serves to further distinguish since Johnson neither describes nor suggests: "a member coupled between an upper end portion of the second member and the wire to transfer a force generated by the wire to the second member."

Claim 11 depends from claim 6 and serves to further distinguish since Johnson neither describes nor suggests that: "the actuator is a ribbon with the ribbon changing between a convex and a concave shape to change the position of the second cylinder."

Claim 12 depends from claim 11 and serves to further distinguish since Johnson neither describes nor suggests "a member coupled between an upper end portion of the second member and the ribbon to transfer a force generated by the ribbon to the second member.

Claim 13 is allowable for analogous reasons as in claim 1.

Claim 51 is allowable over Johnson, since Johnson neither describes nor suggests ... passing current through a member to move a first cylindrical member ... such that when current is consumed from the battery the holes in the cylindrical members ... and when current is not drawn from the battery the holes are not in registration inhibiting air to pass into the battery.

Claim 59, as amended, is allowable for analogous reasons as those in claim 1, since Johnson neither describes nor suggests ... a member coupled to one of the first and second cylindrical members to move the one of the first and second cylindrical members ... to allow air to pass into the battery and to move the one of the first and second cylindrical members ... when current is not drawn from the battery ... to inhibit air to pass into the battery.

Claim 83 is allowable over Johnson, since Johnson neither describes nor suggests ... passing current through a member to move a first member relative to a second member having at least one hole ... such that when current is consumed the hole in the second is open to permit air to flow through the hole into the battery and when current is not flowing through the member inhibiting air from flowing through the hole into the battery.

As for claim 83, the examiner stated: "As for claims 83, 85 and 87, the "first member" of the instant application is considered the inner member of Johnson and the "second member" the outer member." However, in view of the amendment to the claim the examiner's argument is now moot.

The examiner rejected Claims 11, 13, 69 and 70 under 35 U.S.C. 103(a) as being unpatentable over Johnson.

The examiner contends that: "... Johnson discloses the claimed invention except for the shape memory alloy actuator being in the shape of a ribbon instead of a wire." Applicant disagrees. Claim 11 for instance now recites that: "... the actuator is a ribbon with the ribbon changing between a convex and a concave shape to change the position of the second cylinder.

Johnson neither describes nor suggests such an arrangement. Applicant contends that it would not be an obvious matter of design choice to use a ribbon or a wire, and in particular it would not be an obvious modification to have "the ribbon changing between a convex and a concave shape to change the position of the second cylinder.", as now claimed.

Claim 11 and indeed claim 1 does not involve a mere change in the shape of the component. Both claims 1 and 11 involve the a member (claim 1) or ribbon (claim 11) changing shapes to provide the control of a valve using one member, which Johnson does with two members. Applicant contends that this would not be recognized as being within the level of ordinary skill in the art.

It is believed that all the rejections and/or objections raised by the examiner have been addressed.

In view of the foregoing, applicant respectfully submits that the application is in condition for allowance and such action is respectfully requested at the examiner's earliest convenience.

All of the dependent claims are patentable for at least the reasons for which the claims on which they depend are patentable.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

Please apply any charges or credits to deposit account no. 06-1050.

Respectfully submitted,

Date: _____

11/5/07



Denis G. Maloney
Reg. No. 29,670

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110
Telephone: (617) 542-5070
Facsimile: (617) 542-8906